# *Balancing Safety and Security in the Transport of Hazardous Materials*

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# *Current State of Security Preparedness*

- Existing programs provide solid foundation for addressing threat of terrorism
  - Excellent record for safe transportation and response to incidents
- Range of legislative proposals is emerging
- Initiatives in progress to increase security and reduce risks

# *Selected Industry Initiatives*

- American Chemistry Council (ACC)
  - Responsible Care® Security Code – Site and "Value Chain"
- Association of American Railroads (AAR)
  - Freight Railroad Security Plan
- Joint ACC-AAR task force to address "interface" issues
- American Trucking Association
  - Highway Watch program "America's Trucking Army"
- Customs-Trade Partnership Against Terrorism (C-TPAT)

# *The Challenge*

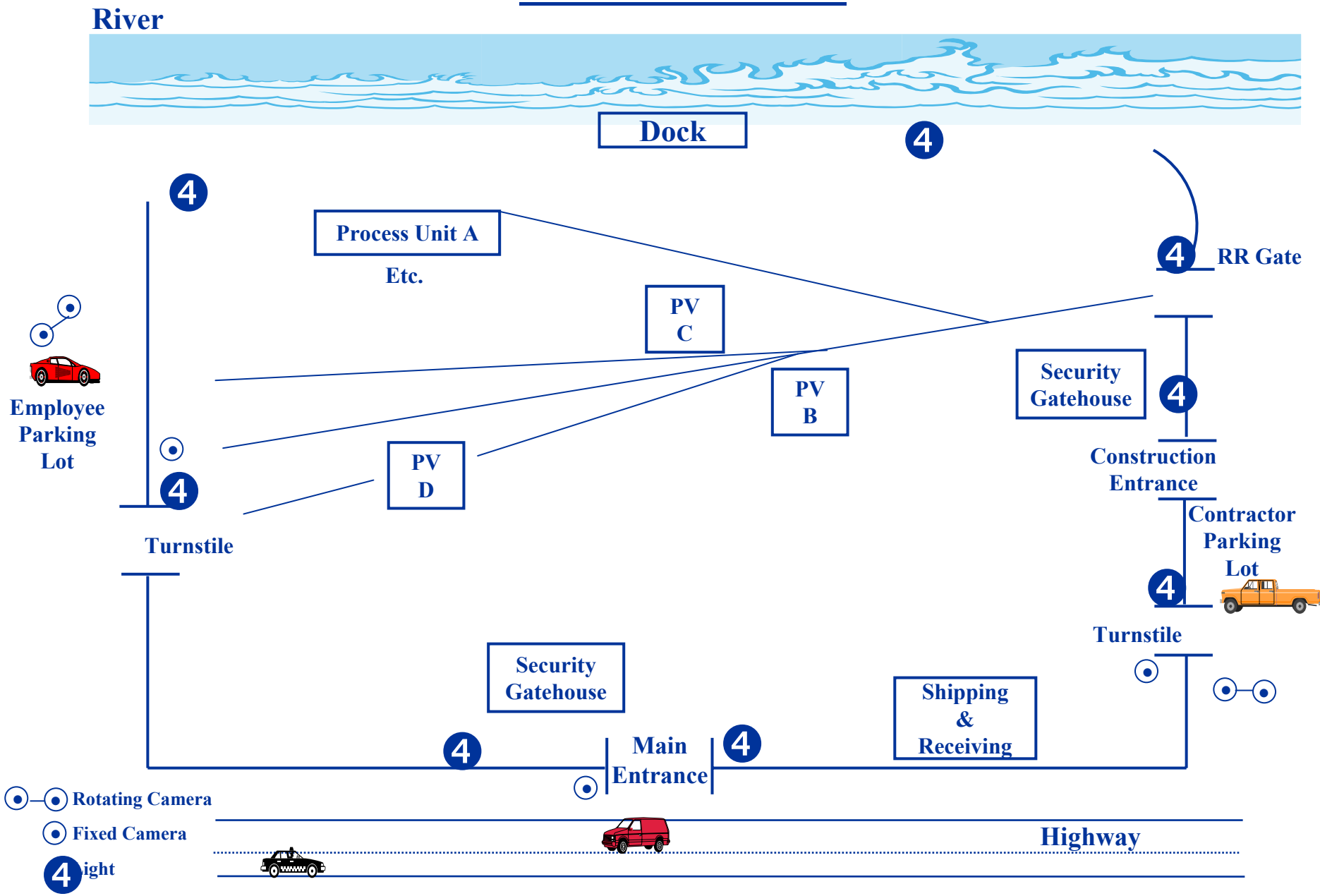
# *Plant Site Characterization*

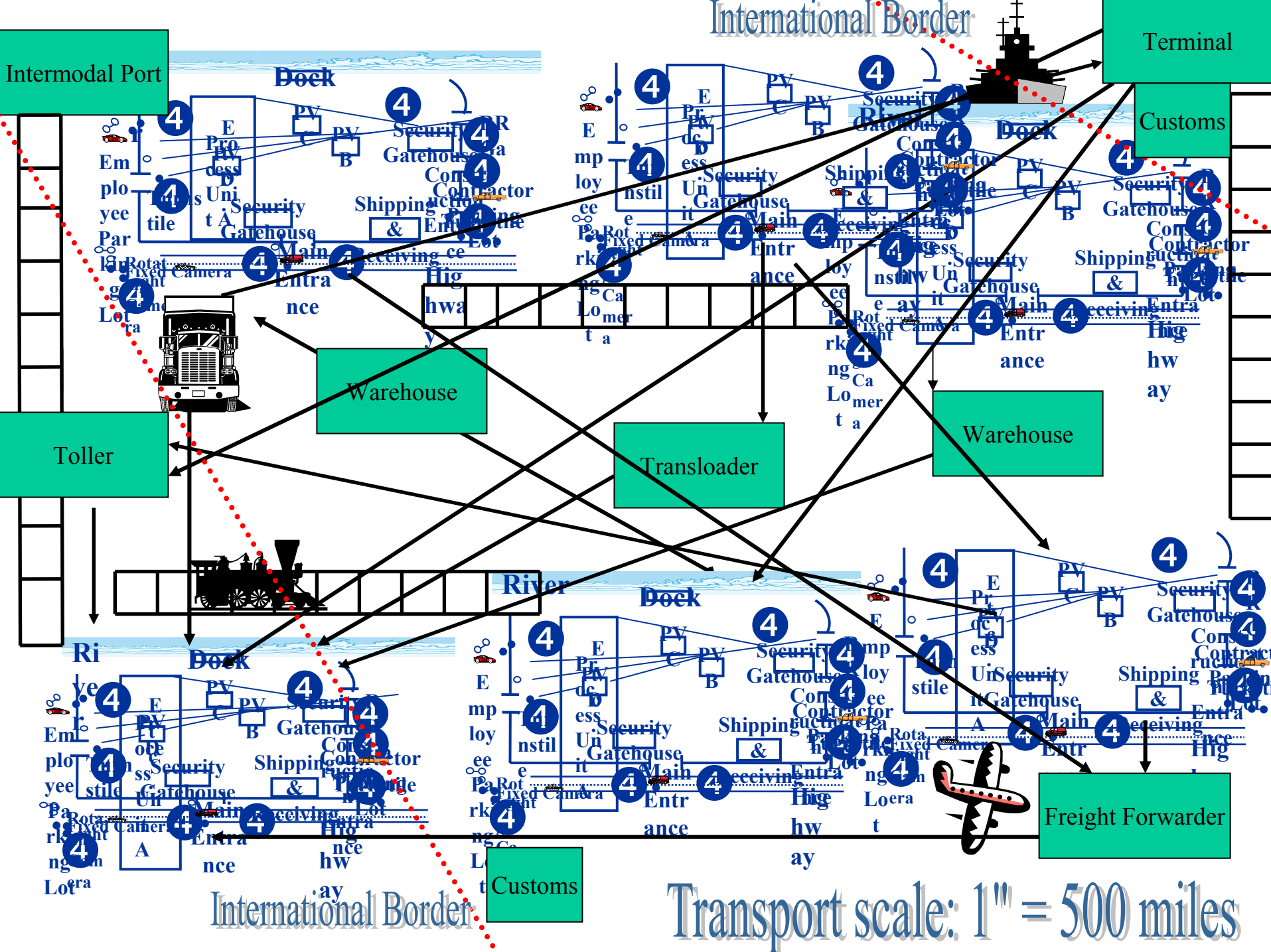
- Sites
  - Stationary and physically definable
  - Basically closed infrastructure
    - Fences, gates, guards, alarms
  - “Fixed” location, processes/products, equipment, employees, communities, services

# *Distribution Characterization*

- Distribution
  - Dynamic, thousands of transactions
  - Basically open infrastructure
    - Zero buffer zone
  - "Varying" location, processes/end uses, equipment, employees, communities, services

# "SITE SCHEMATIC"




International Border
Terminal
Intermodal Port
Customs
Dock
Warehouse
Toller
Transloader
Warehouse
River
Dock
Freight Forwarder
Customs
International Border
Transport scale: 1" = 500 miles

# *Security Responsibilities*

- Shared responsibility for safe and secure movement of goods
  - Shipper
  - Carriers/other logistics service providers
  - Warehouses, terminals, transloaders
  - Toll producers
  - Suppliers
  - Customers
- Partnership critical for safety and security

# *What Makes Sense?*

- Systems- or Model-Based Approach
  - Vulnerabilities likely to be similar during certain stages of movement, regardless of location
- Risk-Based Evaluations
  - Balanced, informed decisions
  - Improved resource allocation
- Intelligence-Driven Plans and Actions
  - Rational baseline security efforts
  - Adjust countermeasure activities to threat level
- Cooperation and Coordination between Stakeholders
- Safety and Security Program Integration

# *Stove-Piping Safety and Security…*

- Security Mania
  - Risk trade-offs
    - Increase in frequency and/or consequences from accidental, not intentional, causes
      - Routing, placarding, modal changes
    - Public health and safety
    - Economic
- Security Ignorance
  - "Usual suspects" prioritization may miss chemicals most attractive for intentional mis-use

# *Security vs. Safety Risk*

- Risk is a function of frequency (that an event will occur) and consequence
  - Frequency of accidents and certain other events can be estimated from historical data
  - Frequency or likelihood of terroristic acts is generally UNKNOWN
    - Consider *target attractiveness* and *vulnerability* as surrogates for frequency
- Do not confuse the presence of risk factors with likelihood
  - Misdirection of resources can result

# *Security "Solutions"*

- Seek *multi-modal* solutions
  - Ideally technology based
- Seek *broadly applicable* solutions
  - Reduce impact of breaches due to attack, accidents, mechanical failures
- Seek *cost-effective* solutions
  - Ideally applicable to existing equipment as well new construction

# *Emergency Response*

The number of *federal, state, local, and private* entities that may become involved in an incident are increasing

- Anti-terrorism/WMD
- BioHazard
- Bomb squad
- HazMat
- Fire
- Police
- EMS, hospitals
- Private ER teams

**Unified Command System is Critical!**

You either control the incident or it controls you

# *Pre-Emergency Planning Considerations*

- Coordination with involved parties
  - Contact info
- Defined lines of authority and personnel roles
- Training
- Communications
- Emergency recognition and prevention
- Safe distances and places of refuge
- Site security and control
- Evacuation routes and procedures
- Decontamination
- Emergency medical treatment
- Emergency alerting and response procedures

# *Needs - Emergency Response*

- Joint training, planning and drills between involved parties
- Getting the right information to the public :
  - Development of “credible sites” for information: television, radio, weather radio, internet
  - Use of call-out and related technology to activate plans and inform/instruct residents
- Community planning and communication pre-incident

# *"Best" Practices*

- Corporate policies specifically address transportation safety and risk management
  - Transportation should be considered an extension of manufacturing process
    - Safety and Logistics must work together
- Collaborative approach with partners & stakeholders to improve transportation safety
  - Issue identification, prioritization, and resolution
  - Route evaluation
  - Emergency response planning, training

# *Route Assessment Recommendations*

- Avoiding populated areas generally should not be the main or only focus
- Work with carrier to first identify two or three viable options
- Remember that the calculated risk cannot and does not represent true risk to a population…
  - Total route risk vs. segment risk
  - Some factors cannot be well quantified
    - Accident rate
    - Population exposure
    - Effectiveness of response measures

…therefore must work with carrier to evaluate and understand intricacies of route

# *Summary*

- State of the industry positive and improving
- Cooperation between shippers, carriers, and other parties crucial to identify and manage safety and security risks
- Systematic, risk-based approach helpful to focus activities
- Risk trade-offs must be considered
- Proposed research or solutions should be carefully evaluated for practical application/value